

REMARKS

Claims 1-5, 7-8, 10-11, and 14-15, 17 are pending in the application; claims 6, 9, 12, 13, and 16 are canceled; claim 17 is added.

Rejection under 35 U.S.C. 103

Claims 1-4, 6-11, 14-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Rising* (US 4,323,230) in view of *Salomon* (US 6,270,070).

Claim 1 has been amended by including features from claims 6, 9, and 16 as well as features taken from the specification (paragraphs 0026) and illustrated in the drawings (e.g. Fig. 1). The feature of claim 17 is disclosed in paragraph 0029.

Claim 1 as amended claims a feed device for stacks of paper or plastic material, The feed device comprises at least one transport unit comprising a slide for the stack and at least one transport element, wherein the slide and the at least one transport element are not drivingly connected to one another. A separating unit comprising at least one rotatably driven feed drum is provided. The transport unit transports the stack to the separating unit. The transport unit is pretensioned in a transport direction toward the at least one feed drum such that the stack rests with pretension against the feed drum. At least one sensor is provided, wherein the at least one transport element is coupled to the at least one sensor that provides a switching signal for driving the at least one transport element, wherein the at least one sensor is a light barrier and wherein the switching signal is generated when a part of the slide enters a monitoring area of the at least one sensor upon moving by pretension in the transport direction. A support unit for the stack resting on the slide is provided wherein the support unit rests against a side of the stack facing away from the feed drum. The support unit engages in a first engaging position the at least one transport element of the at least one transport unit and the at least one transport element and the support unit move the stack relative to the slide toward the separating unit when the switching signal is generated.

The feed device according to *Rising* has a transport element 34 in the form of an endless belt and a carriage 17 movable along shaft 52. A stack 14 rests on the transport belt 34 and is supplied to the separation device having a vacuum drum 19. The transport belt 34 is fastened with ends 41, 43 to the carriage 17 (see Fig. 4) so that the carriage 17

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can be moved by the transport belt 34 along the shaft 52. The carriage 17 supports a pressure plate 18 against which the stack 14 rests. By means of the transport belt 34 the stack 14 on the carriage 17 is moved against the stop member 16 in the area of the drum 19. The sensor 101 is a pressure sensor having an arm 102 resting against the stop member 16. Motor 46 that moves the transport belt 34 and thus the carriage 17 is switched on by the pressure switch 101 when the pressure of the stack 14 acting on the stop member 16 drops below a predetermined value (when the pressure is too low, the stack 14 is not sufficiently pressed by the carriage 17 and the pressure plate 18 against the stop member 16 so that the separation is impaired). As soon as the pressure of the stack 14 acting on the stop member 16 surpasses again a predetermined value, the motor 46 is switched off (see col. 3, lines 57-62). As expressly stated in the cited reference, the motor 46 is thus continuously switched on and off in order to ensure a relatively constant pressure of the stack 14 acting on the stop member 16 (see col. 3, line 68, to col. 4, line 2).

The present invention does not carry out such a constant switching of the drive for the belts 2, 3. The present invention is based on a different concept. The sensor 47 in the form of a light barrier switches on the drive for the belts 2, 3 when the bearing 13 as a part that is fixedly connected to the slide 9 reaches the monitoring area of the light barrier 47. This situation is illustrated in Fig. 2. The bearing 13 and the bearing 14 support the slide 9 on axle 15; the bearings 13, 14 and thus the slide 9 are movably supported on the axle 15. When the bearing 13 reaches the monitoring area of the light barrier 47, the light barrier 47 causes the drive for the belts 2, 3 to be switched on so that the belts 2, 3 and the support unit engaging the belts 2, 3 move the stack 1 continuously against the feed drum 32 - the slide 9 is not being moved by the belts 2, 3. The slide 9 is only acted on by the pretension (spring 18).

In contrast to the feed device of *Rising*, the slide 9 of the present invention is not moved by a driven transport element (such as a belt) during separation of the sheets of the stack 1. In order to realize the separation or individualization, the feed device according to the invention is provided, in addition to the slide 9, with a support unit 20 that has a support plate 21 for supporting the stack 1 at the end facing away from the feed drum 32.

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The support plate 21 is connected with its bottom edge to the two transport belts 2,3 in a positive-locking way or frictionally. The support unit 20 is moved together with the transport belts 2, 3 relative to the slide 9. The transport belts 2, 3 are driven independently of the slide 9. When the transport belts 2, 3 are driven, only the support unit 20 is moved but not the slide 9. The slide 9 is pretensioned by the force of the spring 18 that loads the slide 9 in the direction toward the feed drum 32.

Salomon discloses a feed device in which the stack end is supported by a guide wall 13 that engages with its lower edge track portions of the transport belts 23, 25. The stack is transported by the guide wall 13 driven by the belts 23, 25 toward the separator 45. The guide wall 13 is rotatably supported by means of sleeve 13a on guide rod 15. When the entire stack has been removed by the separator 45, the guide wall 13 is pivoted upwardly about guide rod 15 so that the guide wall 13 is out of engagement with the transport belts 23, 25. The guide wall 13 can be moved along the rod 15 into the initial position in order to receive and transport the next stack toward the separator 45.

Both *Rising* and *Salomon* concern feed devices with a single transport unit with which the stack is transported against the individualization unit. In *Rising* the carriage 17 with the pressure plate 18 and belt 34 form the transportation device; in *Salomon* the guide wall 13 connected to the transport belts 23 and 25 is the transport device. Combining the two drives is not obvious because they perform both the same task with somewhat different means. Essentially, one drive can only be exchanged for the other.

The carriage driven by belts and provided with a pressure plate as disclosed in *Rising* is a self contained unit as is the differently designed drive principle (belt engages by guide wall) in accordance with *Salomon*. There is no suggestion to combine the two in any way.

The inventive combination of a slide that is pretensioned in the transport direction and of a transport element with support unit engaging the transport element which transport element is activated when a certain position of the slide in the transport direction is detected and which moves the stack relative to the slide is not suggested by the prior art references, alone or in combination.

A combination that would appear feasible is a replacement of the pressure plate 18

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with the pivotable guide wall 13; however, such a replacement does not lead a person skilled in the art to the subject matter as claimed in claim 1.

It is important in connection with the invention as claimed that the slide 9 and the support unit 20 are movable independently of one another in the direction toward the feed drum 32. The slide 9 is loaded by a pressure spring 18 in the direction toward the feed drum 32; the drive belts 2, 3, act on the support unit without acting on the slide 9. When a stack 1 is placed into the feed device, the stack is initially moved by the force of the pressure spring 18 moving the slide 9 in the direction toward the feed drum 32. This causes the bearings 13, 14 of the slide 9 to be moved along the axle 15. During this movement the transport belts 2, 3 are not driven; they are standing still. This is the first difference to the cited references to *Rising* and *Salomon*. In *Rising*, the transport belt 34 is driven from the beginning because the stack cannot be moved in any other way against the separation device. In *Salomon* the transport belts 23, 25 must be driven from the beginning because otherwise the stack cannot be transported by the guide wall 13 in the direction toward the individualization device.

As soon as the bearing 13 of the slide 9 according to the present invention reaches the light barrier 47, the drive for the transport belts 2, 3 is switched on. Because the support plate 21 of the support unit 20 is drivingly connected to the transport belt 2, 3 the support unit 20 is moved along the axle 24 so that by means of the support plate 21 the stack 1 is moved to the separation device. The sensor 47 of the present invention has the task to initiate movement of the stack by means of the support unit 20 toward the feed drum 32 essentially to take over movement of the stack previously effected by the pretension. The pressure switch of the supply device according to *Rising* however is switched on and off constantly in order to maintain the pressure acting on the stack within a preset limit range. This is also a basic difference to the present invention.

Reconsideration and withdrawal of the rejection of the claims 1-4, 6-11, 14-16 pursuant to 35 USC 103(a) are therefore respectfully requested.

Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Rising* (US 4,323,230) in view of *Salomon* (US 6,270,070) and JP 02 018 229 (*Nanshin et al.*).

Claim 5 is believed to be allowable as a dependent claim of claim 1.

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CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on July 5, 2006,


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